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# Shape coexistence in 94Zr studied via Coulomb Excitation

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The Zr isotopes (Z=40) belong to a mass region where shape coexistence has been proposed. These isotopes exhibit a variety of shapes, going from deformation near mid-open-shell (80Zr), through sphericity near the closed neutron shell (90Zr) and sub-shell (96Zr), and then to a sudden reappearance of deformation at 100Zr. Such a variety of behavior is unprecedented anywhere on the nuclide chart. Shape coexistence has been also suggested by several experimental works, however, direct information on the shape of ground and excited states are still lacking for these isotopes, since multi-step Coulomb Excitation measurements have not yet been performed on these isotopes.
94Zr is particularly interesting because it is thought to be a strong candidate for displaying type-II shell evolution, as recently proposed for the Zr isotopes around N = 56, by state-of-the-art Monte Carlo Shell Model calculations.
As such, a dedicated experiment to study collectivity and configuration coexistence in 94Zr by means of low-energy Coulomb excitation was performed at the INFN Legnaro National Laboratory. The GALILEO-SPIDER setup, which in this instance has been further implemented with 6 LaBr3:Ce scintillators, has been used.
In this talk, I will present the results of the experiment, discussing the information on the shape obtained from the analysis with the GOSIA code. A preliminary comparison with Monte Carlo Shell model predictions will be also shown.

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